DOCUMENT RESUME

ED 217 423 CS 206 930

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TITLE Growth in Writing during the College Years: A Preliminary Look.
PUB DATE Mar 81
NOTE 12p.; Paper presented at the Annual Meeting of the Conference on College Composition and Communication (32nd, Dallas, TX, March 26-28, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS College Students; Higher Education; Longitudinal Studies; Majors (Students); *Student Development; *Student Improvement; Syntax; *Writing Evaluation; *Writing Research; *Writing Skills
IDENTIFIERS *Syntactic Complexity

ABSTRACT

Writing samples from 20 college students were examined for the quantitative and qualitative changes that occurred between their freshman and junior years. The writing samples were analyzed quantitatively for mean length of T-unit and subordinate clauses per T-unit and holistically for focus, organization, development, and coherence. These analyses indicated modest growth in syntactic complexity, supporting the contentions from previous research that syntactic growth is at a plateau during the first 3 years of college and that it may not increase after high school unless writing is an important component of one's work. In contrast to the modest growth in syntactic complexity, the writing samples did not show increased mastery of traditional rhetorical criteria as evaluated holistically by trained readers. This result supported previous research conclusions that third year university papers rated no higher on such rhetorical criteria as unity, organization, and development than papers written by high school seniors. Since two of the students in the study reported and evidenced changes in writing due to their academic major (their public relations teachers urged them to write concisely and to find short, snappy ways to express ideas), a future research topic might be the relationship between academic major and changes in student writing. (RL)

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Growth in Writing during the College Years: a Preliminary Look

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Paper presented at the Conference on College Composition and Communication, March 27, 1981, Dallas, Texas

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Growth in Writing During the College Years:

A Preliminary Look

This morning you have heard about the operation of our Writing Competency Program at the University of Northern Iowa (UNI). As I have worked with this program over the past three years, one major question has kept dancing in my head. That question: what changes take place in the writing of college students after they leave a freshman writing class and move into their junior and senior years? My question about possible changes in writing during the college years has two major parts: first, does the writing show quantitative growth as measured by syntactic complexity; and second, does the writing show qualitative growth according to the judgment of trained readers?

As a first step in trying to answer these questions, I have compared two writing samples from twenty students at UNI. For each student, the first sample was the Writing Competency Examination written during the student's first semester of college work; the second writing sample was collected when each student had reached junior status and successfully completed two years of college. I would now like to tell you how these twenty students became my sample.

An enrollment search showed a pool of 350 juniors who had taken the writing competency test the first semester of their freshman year. I queried this group, asking them if they would volunteer to help in a research project by giving me two hours of their time for a writing task. Of the 350, 97 answered my query; of those 97, 35 said yes, they would write; and of those 35, 20 actually wrote. (If you are working a quick percentage in your head, yes, my success rate in garnering writing samples from student volunteers was a bit under 6%—not a notable batting average.)

The sample of 20 clearly was not representative of the junior class. Of the 20, for example, 18 were women, only two men. Also the ACT scores were higher for the sample than the average for the junior class. On the other hand, the sample represented a wide range of academic majors in the university, with representation from the four undergraduate colleges and the School of Business. (Table 2 shows the majors in the right hand column.)

As a framework for this pilot study, I would like to review briefly several studies of developmental growth in writing. The work of Hunt (1965, 1970), Loban (1976), and O'Donnell (1967) supports the hypothesis that writing as measured by syntactic complexity develops in a predictable sequence, although the rate of growth for any one individual as well as the rate among individuals is uneven.

Table 1 summarizes some of the earlier studies of syntactic complexity. In 1965, Hunt reported on the writing of students in 4th, 8th, and 12th grade. His 54 subjects, all students of average intelligence, included 9 females and 9 males from each of the three grades. For each student, Hunt analyzed 1,000 word samples. He also analyzed the writing of skilled adults by using 1,000 word samples from 18 writers published in Atlantic and Harpers. In this 1965 study, Hunt defined a new syntactic unit, the minimal terminable unit, or T-unit, now widely accepted as one of the best measures of syntactic complexity. In Table 1, you can see the increase in mean length of T-unit from 8.6 for 4th grade, 11.5 for 8th, 14.4 for 12th to 20.3 for skilled adults.

A 1967 study by O'Donnell, Griffin and Norris showed a similar pattern of syntactic growth. Table 1 shows that for grades 3, 5, and 7 the mean length of T-unit was 7.67, 9.34, and 9.77 respectively. Loban's 1976 longitudinal study of 211 students also showed this pattern of syntactic growth. He reported the mean length of communication unit (a measure almost exactly like Hunt's

T-unit). In Table 1 you will see this mean length increased from 8.02 to 13.27 between grades 4 and 12.

While these three studies examined material generated by the writers, two later studies (Hunt, 1970 and Stewart, 1978) used a controlled stimulus passage (CSP) to study syntactic complexity. Subjects were asked to rewrite a group of 32 short sentences (O'Donnell's "aluminum" passage) in a better way. Although the mean length of T-unit at the various grade levels is less for the CSP rewrite than the mean length for student-generated writing, the basic pattern of growth remains. Again, looking at Table 1, you will see Hunt's 1970 figures: 5.42 to 11.30 from 4th to 12th grade, with 14.78 for skilled adults. In addition, a new group, average adults, was included in this study; their mean is 11.85, closer to the mean for 12th grade than to the mean for skilled adults.

Stewart's 1978 study reported on syntactic complexity at various university levels based on the CSP task used by Hunt. In Table 1, the mean length of T-unit for first, second, and third year university students shows little change at 12.25, 12.36, and 12.61 respectively. All three scores are less than the 12.87 mean Stewart shows for 12th grade students on the same CSP task. At the fifth and sixth year university levels, however, the mean rises to 13.85.

To return to the present study, the 20 volunteers were asked to replicate the writing competency test they took as freshmen. This entailed their writing an impromptu paper in which they stated an opinion and supported it. As freshmen they were asked to shape an opinion statement on one of three broad topics given at the start of a two hour testing period for an audience of faculty readers. The writing task remained the same for the junior year except that students were asked to write on whatever topic they had chosen as freshmen. Both the freshman and junior writing samples were analyzed in two ways. First, mean length of T-unit and subordination ratio (subordinate clauses as a percent of T-units) were

calculated to look for quantitative growth. Second, each paper was read independently by two faculty readers to make judgments on such criteria as focus, organization, development, and coherence to look for qualitative growth.

The results of the quantitative analysis appear in Table 2. The mean length of T-unit for first semester freshmen ranged from a low of 12.0 to a high of 26.8 with a mean of 15.3. For these same students two years later during their junior year, the mean length of T-unit ranged from a low of 12.9 to a high of 23.3 with a mean of 16.0. Of the twenty subjects, 15 show an increase, one remains unchanged, and 4 show a decrease. The next two columns show subordination ratios for the two years. For first semester freshmen, this ranged from a low of .32 to a high of .97 with a mean of .64. Two years later the ratio ranged from a low of .36 to a high of 1.20 with a mean of .75. Of the twenty subjects, 15 show an increase in this ratio, 5 a decline. Only one of the 20 subjects showed a decline in both length of T-unit and subordination ratio. (See Table 1 for a comparison with earlier studies.)

The next two columns show the total number of words for each paper. In considering the length of writing needed for a reliable sample, I have followed O'Hare's finding that a 400 word sample is as reliable as one of 1,000 words. The first 15 writers produced the desired length for both samples. The last 5 writers produced fewer words for one sample. The five samples that do not meet the desired length are underlined in Table 2. Only five of the students wrote more words as juniors than they did as freshmen while thirteen wrote fewer words. Two students wrote exactly the same number of words for both samples.

I would now like to turn to the second part of the analysis: reader judgment of the quality of the writing samples. Probably all of us agree that reader judgment provides the most valid means of evaluating writing. In other words, what goes on between the eyes and mind of the reader and the words on the page

is the true test of writing quality. As we know all too well, reader judgments pose problems in reliability, both intra- and inter- judge reliability. The use of a "holistic analytic instrument" as described by Cooper (1977), can provide a reasonable level of reliability. Growing out of Diederich's (1974) work on evaluation, these instruments focus on current-traditional rhetorical criteria and are widely used to evaluate student writing. The writing competency examinations at UNI are rated by faculty in the English Department trained to use holistic-analytic criteria to rate papers for focus, organization, development, and coherence as well as for surface correctness.

For this study, each paper was read independently by two of these trained faculty readers. All papers were typed exactly as the students wrote them and assigned a code number. Readers were asked to rate the papers on a scale of 1 to 5 using the same criteria used for the university's writing competency examination. Each writing sample was assigned a numerical value, the mean of the two reader ratings. These values were then totaled and the mean for both groups calculated. For the freshman papers, the mean was 3.44; for the papers written during the junior year, the mean was 3.42. Thus, trained readers judged both groups to be about equal in quality on the basis of rhetorical criteria.

Before attempting to draw any conclusions about either the syntactic or rhetorical analysis, I wish to note several limitations. First, the sample is small and made up of volunteers rather than being a random sample. Another possible limitation is the difference in the contexts for writing during the freshman and junior years. The freshman writing was an actual examination while the second writing lacked that examination pressure. As freshmen, they wanted to pass that examination; it is a graduation requirement at UNI. To the best of my judgment, however, none of the juniors agreed to the writing task just for a lark. In conversation with me, they each expressed concern about the

quality of their writing and quickly accepted my offer to confer with them about their writing after the analysis was completed. I hypothesize, then, that they made a sincere effort both times: the first time to pass the exam, and the second time to give me a sample of their best effort.

Writing tasks like the one used here are naturally open to criticism. Students carrying out a task to demonstrate writing per se in a fixed period usually spend little time in planning; incubation and pre-writing are cut short. Also cut short is revision; usually it is limited to editing for surface conventions. Another criticism of a writing task like this one is that students are not truly engaged in what they are doing, with little personal commitment to what they are writing about and little sense of an audience they are writing for. The tendency is often to play it safe and follow some tidy formula that has worked in the past. Here I think of Emig's (1971) case study of Lynn, the 12th grader who chose the safe, manageable topics.

In spite of these criticisms, the controlled topic in the controlled setting does offer some advantages. Certainty that the writing is, indeed, the work of the writer and not that of someone else is one. Control of mode, topics, and audience is another, especially when one goal is to measure syntactic complexity. That both mode and audience have a strong effect on length of T-unit has been well-established (Crowhurst, 1979; Perron, 1977). For my purpose then of comparing the writing of individuals across a two-year time span, the advantages of the controlled task appeared to outweigh the disadvantages.

To summarize, this pilot shows some growth in syntactic complexity as measured by mean length of T-unit and subordination ratio between the freshman and junior college years for this group of 20 volunteers. This modest growth tends to support Stewart's (1978) hypothesis that syntactic growth is at a plateau the first three years of college and Hunt's (1965) hypothesis that

syntactic complexity may not increase after high school unless writing is an important component of one's work. In contrast to the modest growth in syntactic complexity, the writing samples do not show increased mastery of traditional rhetorical criteria as evaluated holistically by trained readers. This supports the finding reported by Freedman and Pringle (1980) that third year university papers rated no higher on such rhetorical criteria as unity, organization, and development than papers written by high school seniors. It is clear, of course, that syntactic complexity and quality of writing do not necessarily go hand in hand. For some purposes, for some audiences, and for some modes, syntactic complexity may detract from writing quality (Williams, 1979; Crowhurst, 1979; Moffett, 1968).

One question of interest for future research is a possible relationship between college students' academic majors and changes in their writing. Students 19 and 20 are cases in point. Both young women were majors in public relations and both told me they thought their writing had changed markedly since they were freshmen. They have been urged, they report, to write concisely and to find short, snappy ways to express ideas. One of these students (19) wrote the briefest essay out of the 40, dropping from over 600 words in her freshman essay to 264 words as a junior. The other student (20) shows the one large drop in mean length of T-unit between the freshman and junior year, a drop of over seven words, from 26.8 to 19.4. It is inviting to speculate that the demands of a student's major may have considerable influence on the structure of student writing. This is but one of the questions raised by this study. We are just beginning to sketch a picture of writing during the college years. Much more data is needed to make that picture clear.

Table 1
Two Measures of Syntactic Complexity

Mean length of T-unit

	Grade 3	Grade 4	Grade 5	Grade 7	Grade 8	Grade 12	Avg. Adult	Skill. Adult	Univ. 1	Univ. 2	Univ. 3	Univ. 5–6
Hunt, 1965		8.6			11.5	14.4		20.3				
O'Donnell, 1967	7.67		9.34	9.77								
Loban, 1976		8.02			10.37	13.27						
Hunt, 1970		5.42			9.84	11.30	11.85	14.78				
Stewart, 1978						12.87			12.25	12.36	12.61	13.85
Eblen, 1981									15.3		16.0	

Subordination Ratio

Hunt, 1965		.30			.42	.68		.78				
Loban, 1976					.50	.60						
Hunt, 1970		.04			.43	.44	.47	.51				
Stewart, 1978						.50			.48	.57	.55	.60
Eblen, 1981									.64		.75	

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Table 2

DATA ON CHANGES IN THE WRITING OF
COLLEGE STUDENTS BETWEEN THE FRESHMAN AND JUNIOR YEARS

	78 mean length T-Unit	80 mean length T-Unit	78 sub. ratio	80 sub. ratio	78 total number words	80 total number words	Major
1.	12.7	13.7	.46	.53	556	521	English
2.	16.0	16.8	.79	.90	672	638	Speech
3.	13.2	14.9	.50	.68	823	596	Math
4.	13.8	15.4	.72	.68	497	395	Biology
5.	20.0	18.2	.88	1.15	823	839	Bus. Mkt.
6.	14.7	13.8	.66	.78	559	443	Bus. Mng.
7.	15.5	15.9	.69	.84	544	493	Business
8.	18.4	16.2	.84	.61	682	535	Bus. Mng.
9.	12.1	13.1	.51	.68	446	446	Acctng.
10.	13.3	20.4	.97	1.20	452	612	Soc. Stud.
11.	12.0	14.2	.67	.47	625	483	Sociology
12.	17.8	18.0	.54	.96	426	414	Speech Path.
13.	14.0	16.3	.42	.39	504	504	Spec. Ed.
14.	12.9	12.9	.32	.53	529	412	Spec. Ed.
15.	17.9	23.3	.93	1.18	482	513	Textiles
16.	14.0	14.5	.57	.63	589	275	Speech
17.	12.5	13.9	.50	.36	299	500	Acctng.
18.	14.1	16.0	.54	.64	396	353	Recreation
19.	13.6	13.9	.37	.84	624	264	P.R.
20.	26.8	19.4	.93	.96	375	426	P.R.
Mean	15.3	16.0	.64	.75			

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